

## ABSTRACT OF THE DISCLOSURE

5        The human receptor H4-1BB has been isolated, sequenced and disclosed herein. The cDNA of the human receptor H4-1BB is about 65% homologous to the mouse cDNA 4-1BB and was isolated by using probes derived from cDNA 4-1BB. A fusion protein for detecting cell membrane ligands to human  
10 receptor protein H4-1BB was developed. It comprises the extracellular portion of the receptor protein H4-1BB and a detection protein (alkaline phosphatase) bound to the portion of the receptor protein H4-1BB. B-cells that have expressed a ligand to receptor protein H4-1BB can be  
15 treated with cells that have expressed receptor protein H4-1BB and B-cell proliferation may be induced. The use of H4-1BB to block H4-1BB ligand binding has practical application in the suppression of the immune system during organ transplantation. A monoclonal antibody against H4-  
20 1BB can be used to enhance T-cell proliferation by treating T-cells that have expressed receptor protein H4-1BB with the anti H4-1BB monoclonal antibody. Tumors transfected with H4-1BBL may be capable of delivering antigen-specific signals as well as the co-stimulatory signals and can be  
25 killed by human cytotoxic T lymphocytes.